Chapter 4: Measuring Material Hardship in the SIPP

Data from the SIPP have frequently been used by researchers to assess families' material well being and to create material hardship indexes. While it is clear from the discussion presented in Chapter 3 that many researchers have used SIPP-based measures to examine material hardship, far less is known about the extent to which the selected measures are adequate or appropriate for measuring material hardship among families with children.

In this chapter we use the 1996 SIPP to conduct descriptive analyses of the specific measures that have most frequently been used by researchers in their material hardship definitions and indexes. The goal is to provide concrete data examples that further our understanding of these material hardship measures. The analyses respond to recommendations made by participants at the Roundtable Meeting for additional empirical analyses that examine the relationships between measures of material hardship in the SIPP and other measures of poverty and demographic characteristics. (See Appendix A for Roundtable Meetings participants' recommendations for "next steps.")

The analyses presented in the following sections examine how SIPP measures used by researchers to describe material hardship (i.e., those presented in Chapter 3) relate to: 1) other poverty measures; 2) general population characteristics (e.g., urban/rural), to understand how patterns of a particular hardship might differ; and 3) each other, to determine the congruence of the various hardship measures. Additionally, to improve our understanding of how these measures may be used to evaluate need among families with children, the comparisons presented in this chapter have been restricted to families with dependent children. This restriction reflects the growing interest in how these families are faring in the wake of welfare reform and, more specifically, the presence of specific types of material hardship among families with dependent children, since they are most likely to be affected by changes in federal and state welfare programs.

This chapter makes several important contributions to our understanding of material hardship and its measurement. First, to the extent that a condition frequently occurs among non-poor families with children, it may not be a useful indicator of the kind of hardship in which we are most interested – that which is specifically related to unfavorable economic circumstances. Similarly, if measures seem to capture conditions only among families with certain demographic characteristics (e.g., urban or rural residence) they may be less useful in identifying hardship among the broader population. Second, to the extent that specific hardships occur together, we also may be able to identify patterns of hardship and where specific measures seem to describe the same experience. This is an important first step in evaluating existing measures and understanding how they might be combined to form a composite index of material hardship.

In the following sections, we describe our methodology for relating measures of material hardship to household characteristics. We then present two series of tabulations: selected measures of material hardship relative to household characteristics, and cross-tabulations of these measures with each other.

The SIPP

The SIPP, conducted by the U.S. Census Bureau, collects a wide variety of economic and demographic information on panels of respondents over a period of several years, contacting sample members every four months. In the following sections, we describe the 1996 SIPP Panel's design and content, as well as that of its Adult Well-Being Topical Module. The section concludes with a discussion of the suitability of these data for analyzing material hardship.

Survey Design[7]

Each SIPP panel of households is derived through a two-stage process: selection of primary sampling units (PSUs), which are counties and independent cities, and selection of address units within PSUs. Sample members are the residents at those addresses. Information also is collected on individuals who join their households through birth or moving in. Original sample members aged 15 and over are followed if they move away. The sampled households are randomly divided into four rotation groups, which are interviewed in successive months. The 1996 panel was designed to run for 4 years, or 12 waves, and had an initial sample size of 40,188 households.

Starting in 1992, a mixed mode survey design has been used to contact and interview households. Generally, household interviews were initially conducted in person during Waves 1 and 2 and by phone during subsequent waves. Computer-assisted interviewing (CATI/CAPI) was introduced with the 1996 panel.

Survey Content

The SIPP interview is comprised of three components: the control card, core questionnaire, and topical modules. The *control card* contains information about the type of housing, household roster, and basic demographics (date of birth, race/ethnicity, origin or descent, gender, marital status, armed forces status, and educational attainment). The *core questionnaire* includes seven sections: labor force participation, earnings, sources and amounts of unearned income, assets, health insurance, participation in various assistance programs, and education activities. This information is collected for all household members age 15 and older. The SIPP's *topical modules* vary by panel and wave. The modules administered to the 1996 panel are listed in Exhibit 4.1.

The key source of material hardship data in the 1996 SIPP is the *Adult Well-Being* Topical Module, which was administered during Wave 8 (in mid-1998).[8] The Census Bureau plans to administer this module again during Wave 8 of the 2001 SIPP panel (summer 2003).

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[7] Material in this subsection and the following is taken from Burstein *et al*. (2003), *Guide to Data Sources on the Determinants of Marriage and Cohabitation*.

[8] During Wave 9 of the 1993 panel, this module was administered in two parts: *Extended Measures of Well-Being* and *Basic Needs*.

Exhibit 4.1

1996 SIPP Topical Modules

	1996 SIPP Topical Module Content
Wave 1	Assistance recipiency history, employment history
Wave 2	Marital history, fertility history, work disability, education and training history, migration history, household relationships
Wave 3	Assets and liabilities, medical expenses/health care utilization, work-related expenses, child support paid
Wave 4	Annual income and retirement accounts, taxes, work schedule, child care, disability
Wave 5	School enrollment and financing, child support, support for non-household members, functional limitations, employer-provided health benefits, work and training activities while receiving public assistance/food stamps
Wave 6	Children's well-being, assets and liabilities, medical expenses/health care utilization, work-related expenses, child support paid
Wave 7	Annual income and retirement accounts, taxes, retirement expectations and pension plan coverage, home health care
Wave 8	Adult well-being, welfare reform (services and benefits received from government agencies and charities)
Wave 9	Assets and liabilities, medical expenses/health care utilization, work-related expenses, child support paid
Wave 10	Annual income and retirement accounts, taxes, work schedule, child care
Wave 11	Child support, support for non-household members, functional limitations and disability
Wave 12	Assets and liabilities, medical expenses/health care utilization, work-related expenses, child support paid, children's well-being

The Adult Well-Being Topical Module

The 1996 SIPP Adult Well-Being topical module evolved from earlier work by the SIPP Interagency Working Group (comprised of Bureau of Labor Statistics, Census Bureau, and Social Security Administration staff), which considered the development of a "well-being" topical module for inclusion on the 1991 and 1992 SIPP panels. For the purpose of developing this module, the Group adopted a broad definition of "well-being," which focused on assessing "quality of life," and developed a comprehensive collection of materials on how to assess the issue of well-being. They subsequently winnowed the list of topics for inclusion to:

- Durable goods;
- Housing conditions;
- Crime conditions;
- Neighborhood conditions;
- Ability to meet expenses;
- Help when in need;
- Food adequacy;
- Community services;
- Food and clothing expenses;
- Housing expenses;
- Transportation expenses;

- Health expenses; and
- Minimum income (Kominski & Short, 1996).

The final set of questions on well-being included in the 1991 and 1992 SIPP was very similar to that used by Mayer and Jencks (1989) in their Chicago-based hardship survey (Bauman, 1998). In evaluating the SIPP well-being data, the Census Bureau found response levels of comparable value to other available data sources and low levels of nonresponse. Further, debriefings with field representatives showed that respondents had few problems with the topics covered in the module (Kominski & Short, 1996).

Bauman (1998) points out, however, that more work is necessary to understand the well-being measures included in the SIPP. While he shows that these measures have a strong relationship to poverty, other factors correlated with poverty (e.g., education, employment status), and undesirable outcomes (e.g., high school dropout), there are still limitations in our understanding of how these measures work. Specific questions feature ambiguities that may complicate their interpretation. Questions also may not reliably measure aspects of need over time. Lastly, there are issues with understanding how these measures work together to describe well-being.

Many material hardship studies have used data from the 1991/1992 and 1993 SIPP panels (e.g., Bauman, 1998; Beverly, 1999a; Federman et al., 1996; Rector et al., 1999; Short & Shea, 1995). The questions included in the 1996 Adult Well-Being Topical Module are very similar to the well-being questions included in the original 1991/1992 panels. (See Appendix B, Exhibit B.2 for a summary of questions included in the 1991/1992 and 1993 SIPP panels.) Specifically, the 1996 module includes batteries of questions on the following seven topics:

- Durable goods;
- Housing safety;
- Neighborhood quality;
- Crime;
- Community Services;
- Basic needs; and
- Food security.

Of these, four are of particular interest for the study of material hardship: durable goods, housing safety, basic needs, and food security. (A complete list of the questions included in the Adult Well-Being Topical Module is included in Appendix C.)

Suitability for Research

The SIPP has a number of advantages for studying material hardship. The Adult Well-Being Module covers many topics of interest, has been administered in three panels to date, and will presumably be included in future panels, so that comparisons in levels of hardship over time will be possible.

Furthermore, the SIPP collects rich economic and demographic information on sampled households for a period of up to four years. Information is collected on all members and they are followed to new locations if they move away either individually or as a group. This allows of changes in

household composition to be tracked during the periods preceding and following the measurement of hardship, and the correlation of hardship measures with many household characteristics. The large sample size also permits subgroup analyses.

The Adult Well-Being Module is administered to *one member in each household*. A household is defined as the group of people living at a particular address at the time of the interview. This approach, however, introduces several possible sources of error. For example, consider the initial question of the Adult Well-Being Module:

> *During the past 12 months, has there been a time when (YOU/YOUR HOUSEHOLD) did not meet all of your essential expenses?*

To the extent that respondents have been members of multiple households during the past year, they may or may not report on the experiences of the household in which they now reside. Similarly, there may be new household members that the respondent knows little about.

These issues do not arise with respect to the *durable goods* and *housing safety* items, because they pertain to a point in time. The problems also are less severe for the *food security* battery, which refers to a relatively narrow window (four months) and allows the analyst to determine at least whether the household "had enough to eat" in each of those months.

The food security battery contains modified versions of some of the questions included in the full 18-question battery that appears in the Current Population Survey (CPS). The questions have been adapted from a 12-month period (as asked in the CPS) to a four-month period. The subset of questions included does not match the short version of six items currently recommended by the Census Bureau, in part because the subset was developed before research on the statistical properties of the full battery had been completed. Mark Nord of the Economic Research Service has developed an algorithm which maps responses to five of these items to the standard three-point food security scale: food secure, food insecure without hunger, food insecure with hunger.[9]

Because the SIPP sample frame comprises the *non-institutionalized* population, some forms of homelessness are not represented. Doubling up also may or may not be captured, depending on whether the householder considers those who moved in to be part of the household rather than visitors.

Methodology

In this section we describe our approach to conducting the analysis. Issues of importance are defining the analysis sample, linking household characteristics to hardship measures, using sample weights, measuring material hardship, and measuring household characteristics.

[9] See Economic Research Service, United States Department of Agriculture, *Survey of Income and Program Participation 1996 Wave 8 Food Security Data File, Technical Documentation and User Notes*.

The Analysis Sample

The tabulations presented later in this chapter are restricted to households with dependent children.[10] A household, however, is an ambiguous concept with regard to measuring basic needs. A respondent who reportedly experienced hardship in the past 12 months may have had children living with him or her in some but not all of those months. *Our approach is to identify households with dependent children based on their composition at the time of the administration of the Adult Well-Being Module*.

Linking Household Characteristics to Hardship Measures

Our analytic approach is, in most cases, to relate reported hardships to household characteristics *at the time of the response*. For example, we examine the prevalence of some hardships during the past 12 months among households whose income *in the current month* is high, medium, or low. As discussed in the previous section, this can perhaps be misleading if the current household characteristics are not reflective of the time when hardship was experienced.

An exception to measuring household characteristics at the time the Adult Well-Being Module was administered occurs with regard to assets. Assets were measured in Wave 6 and Wave 9, while the Adult Well-Being Module was administered in Wave 8. We associate hardships reported in Wave 8 with the assets of the household in which the apparent respondent lived during Wave 6.

Sample Weights and Standard Errors

The SIPP has a very complex sample design. The Census Bureau provides a series of weights and guidance to users on how to apply them.[11] The basic components for all the different sets of weights are the same, namely:

- A base weight that reflects the probability of selection for a sample unit;
- An adjustment for subsampling within clusters;
- An adjustment for movers (in Waves 2 and beyond);
- A nonresponse adjustment to compensate for sample nonresponse; and
- A poststratification (second-stage calibration) adjustment to correct for departures from known population totals.

The weight variable used is WHFNWGT, for the fourth month of Wave 8. This weight represents "the population that the sample household represents in that reference month" (p. 8.4).

The Census Bureau recommends that standard errors be calculated using Fay's method of balanced repeated replications (BRR); however, the replicate weights are not publicly available on the Census

[10] A dependent child is an individual under age 18 who is neither a household head nor the spouse or partner of a household head.

[11] U.S. Census Bureau, *Survey Of Income and Program Participation Users' Guide (Supplement To The Technical Documentation),* Third Edition, Washington, D.C.2001

Bureau website.[12] As a result, we used the method recommended by the Census Bureau for earlier SIPP panels.[13]

Measures of Material Hardship

Three groups of material hardship measures taken from the 1996 SIPP Adult Well-Being Module are included in our analysis. (Exhibit 4.2) These measures correspond with those that have been most frequently used in the material hardship indexes previously discussed in Chapter 3.[14]

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[12] The User's Guide (p. 7-3) notes that:

> The variance formula for Fay's method is
>
> $$\text{Var}(\theta_0) = \{1/[G(1-k)^2]\} \sum_{i=1}^{G} (\theta_i - \theta_0)^2, \qquad (7\text{-}1)$$
>
> where
>
> G = number of replicates;
>
> $1-k$ = perturbation factor;
>
> i = replicate i, i = 1 to G;
>
> θ_i = ith estimate of the parameter θ based on the observations included in the ith replicate;
>
> θ_0 = survey estimate of the parameter θ based on the full sample.
>
> The 1996 SIPP Panel uses 108 replicate weights, which are calculated on the basis of a perturbation factor of 0.5 (k = 0.5). Inserting those values into Equation (7-1) results in the 1996 SIPP Panel variance formula of
>
> $$\text{Var}(\theta_0) = [1/(108 * 0.5^2)] \sum_{i=1}^{108} (\theta_i - \theta_0)^2.$$
>
> The Census Bureau used VPLX software to compute the replicate weights that are available through FERRET.

[13] Variances for this report were estimated using SAS PROC SURVEYMEANS, with the following specifications:

```
proc surveymeans;
weight whfnwgt;
var &varname;
strata gvarstr;
cluster ghlfsam;
domain &domain;
 run;
```

where &varname is the variable being tabulated (e.g. indicator of not paying rent or mortgage), and &domain is the analytic stratifier (e.g. category of income relative to FPL).

[14] Appendix D presents additional descriptive analyses for some durable goods measures that also are included in the SIPP, but have not frequently been used in material hardship definitions or composite measures.

Exhibit 4.2

Material Hardship Measures Included in Analysis

Basic Needs & Food Insecurity (9 measures)	Durable Goods (2) measures)	Housing Quality – Safety and Overcrowding (10 measures)
• Did not pay rent/mortgage • Evicted for failure to pay rent/mortgage • Did not pay gas/oil/electricity bill • Lost gas/oil/electricity for failure to pay • Telephone disconnected for failure to pay • Needed to see doctor/go to hospital but did not • Need to see dentist but did not • Food insecure • Food insecure with hunger	• Refrigerator • Gas or electric stove (with or without oven)	• Problem with pests such as rats, mice, roaches, or other insects • A leaking roof or ceiling • Broken window glass or windows that can't shut • Exposed electrical wires in the finished areas of your home • A toilet, hot water heater, or other plumbing that doesn't work • Holes in the walls or ceiling, or cracks wider than the edge of a dime • Holes in the floor big enough for someone to catch their foot on • 3 or more of the above safety issues • 4 or more of the above safety issues • Overcrowding (more than 1.5 persons per room)

Household Characteristic Measures

In our analyses, basic needs, food security and other material hardship measures have been cross-tabulated with several measures of household characteristics. The following sections describe how the household characteristic measures were constructed.

Income relative to federal poverty level (FPL): Total household income is reported for the last month of Wave 8. This is compared with the federal poverty line (FPL), conditional on household size, and households are classed as: under 100% of FPL, 100-200% of FPL, and over 200% of FPL. These three groups comprise 15, 21, and 64% of the weighted sample, respectively.

Assets: Household assets were measured in Wave 6 (months before the administration of the Adult Well-Being Module) for the household that includes the person responding to the Adult Well-Being Module.[15] Assets are defined in terms of the money available in respondents' *savings* and *checking accounts*. Households are classified as having liquid assets up to $100, and greater than or equal to

[15] It is important to note that not everyone who responds to Wave 8 also responds to the Adult Well-Being module, which may not comprise all the same individuals that are included in Wave 8.

$100. The latter group comprises 66% of the weighted sample, thus being similar in size to the highest of the three income groups.

Urban/Rural: Households are classified according to whether they are identified in the SIPP as residing in a metropolitan or non-metropolitan area. For purposes of confidentiality, the public use data were altered, with 10% of true metropolitan area residents classified as living in non-metropolitan areas. Hence, the results for non-metropolitan areas are not completely accurate, and it might be more correct to refer to this group as "residual" rather than "rural." Households classified as urban comprise 82% of the sample.

Household Composition: All households included in these analyses include dependent children. They are further classified according to whether they include a single adult, a married couple, or multiple adults with no married couple. The presence of a married couple in the household is determined based on the RHTYPE variable (1=married couple present). Married couple households account for 70% of the weighted sample, while single-adult and other multiple adult configurations account for 16 and 13%, respectively.

Variations in Frequency of Material Hardship by Household Characteristics

The potential usefulness of various proposed measures of material hardship depends on how these measures vary across households in different situations. We evaluated whether hardship measures used in the literature show greater frequency among households that are financially better off. Patterns also may vary substantively between urban and rural households, as their needs and opportunities differ. Finally, patterns may vary markedly among households headed by single adults, by married couples and other multiple adult configurations. These patterns are presented and discussed in the following sections.

Basic Needs and Food Security

As described above, the "basic needs" and food security indicators are comprised of nine measures of negative outcomes. Three different reference time periods are used in these questions: the past 12 months, the current point in time, and the past 4 months. The most common of these outcomes are: missing a utility payment during the past year and experiencing food insecurity during the past 4 months (14 and 12% respectively for all households with children; Exhibit 4.3). The rarest of these outcomes are: eviction for failure to pay rent or mortgage and loss of utilities for failure to pay bills (less than 1 and 2%, respectively). Falling in the middle of the prevalence range are: failure to make a rent or mortgage payment, telephone disconnection for failure to pay, failing to see a doctor or go to the hospital, failing to see a dentist, and food insecurity with hunger, all falling between 4 and 10%.

The qualitative patterns of relative prevalence are replicated for less well-off households, but at much higher levels. Food insecurity is experienced by 32% of households under 100% FPL and by 23% of households with no more than $100 in liquid assets; the proportions of these less-well-off groups' failure to pay their utility bills are 29 and 25%, respectively.

In general, these nine outcomes are significantly more common among households with low incomes and limited assets (i.e., income under 100% of FPL and with less than $100 in liquid assets). The sole

exception to this statement is that households in the middle income category, 100-200% of FPL, are no more likely to miss seeing a dentist when they need to than households under 100% of FPL. Aside from this, the prevalences are significantly different in the expected direction (p <0.01) for all comparisons between the respective reference groups.

Not all of these basic need measures seem to be equally useful as indicators of hardship. *Evictions for failure to pay rent or mortgage*, and to a lesser extent *loss of utilities for failure to pay*, are such rare events that they sacrifice specificity to sensitivity. That is, while virtually all households experiencing these events undoubtedly suffer material hardship (indicating that these are highly sensitive measures), many households that do not experience these events also suffer material hardship (suggesting that they are not highly specific measures).

Failure to see a dentist also does not have a clearly defined relationship to income. This finding is not entirely a surprise given that there might be reasons to not to see a dentist that are unrelated to poverty or material hardship (e.g., a general dislike of dental appointments). This is consistent with Roundtable Meeting participants' comments on the importance of knowing or understanding the reasons behind a situation before labeling it a hardship. This is particularly the case with health care-related measures. Researchers who attended the Meeting and had been involved with the National Survey of America's Families (NSAF) noted that they found it very difficult to code reasons for not seeing medical care when it was needed.

Exhibit 4.3

Availability of Basic Needs and Food Security, by Income and Assets

	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Household income relative to FPL									
Under 100%[a]	18.2	1.1	29.4	6.0	15.1	14.9	16.8	32.0	12.6
100-200%	13.0***	0.4**	21.6***	3.2***	10.4***	11.1***	16.0	19.5***	7.6***
Over 200%	4.5***	0.2***	8.7***	1.0***	2.9***	4.4***	6.9***	5.4***	1.7***
Liquid assets									
< $100 [a]	14.6	0.7	24.6	4.5	12.3	12.5	16.1	23.0	9.0
≥ $100	4.7***	0.2***	9.0***	1.0***	2.9***	4.4***	7.1***	6.5***	2.2***
All households	8.3	0.4	14.4	2.2	6.2	7.3	10.2	12.2	4.6

Notes: [a] Reference category.

*** Statistically significantly different from reference category, $p < 0.01$.

** Statistically significantly different from reference category, $p < 0.05$.

* Statistically significantly different from reference category, $p < 0.10$.

***Households in urban and rural areas*:** While most hardships are about equally prevalent among households in rural *versus* urban areas[16], rural households are significantly more likely to miss seeing a dentist when they needed to ($p<0.10$) than their urban counterparts. (Exhibit 4.4) This is in part a reflection of the different income distribution; however, as previously discussed, this measure also could be capturing phenomena unrelated to material hardship (e.g., transportation barriers or travel time to see a dentist).

Controlling for income, rural households tend to be *less* likely to experience hardships. In all three income groups, rural households have a significantly lower rate for at least one of the four occupancy and utility-related hardship measures than urban households. In addition, the poorest rural households are less likely to experience hunger than their urban counterparts ($p < 0.01$).

Households headed by single adults, married couples, and other multiple-adult configurations: All of the "basic needs" hardships are significantly more prevalent ($p < 0.01$) among households headed by single adults than among households headed by married couples. (Exhibit 4.5) Other multiple-adult households fall somewhere in the middle. They show very similar rates to those of single-adult households for eviction for failure to pay rent or mortgage and failure to get needed medical care. While generally not attaining the low rates of hardships as experienced by married couple households, this group does have significantly lower rates than single-adult households for hardships such as failure to pay utility bills, lack of a telephone, food insecurity, and food insecurity with hunger ($p < 0.01$).

The differences between *married couple* and single-adult households cannot be attributed solely to income. Even within income groups, married couple households tend to experience markedly fewer hardships than households headed by single parents. In all three income groups, married couple households are less likely to miss a rent or mortgage payment, miss a utility payment, have utilities cut off for failure to pay, have their phone disconnected, be food insecure, or experience hunger ($p < 0.05$ for 4 of the 18 tests, $p < 0.01$ for the remaining 14). They also are less likely to miss seeing a doctor (in the highest income group; $p < 0.01$) and to miss seeing a dentist (in the two higher income groups; $p < 0.05$, $p < 0.01$). But, the effect of income cannot be ignored. For example, married couple households are 10 percentage points less likely than single parent households to miss a rent or mortgage payment; yet within each of the income groups, the difference is "only" five-to-six percentage points. The remainder is a compositional effect.

Within income groups, households headed by *other multiple adult configurations* tend to look more like single-parent households, although a few differences show up. In the middle-income group (100-200% of FPL), they are less likely than single parent households to miss a utilities payment ($p < 0.05$), but are more likely to miss seeing a doctor ($p < 0.10$).

[16] Recall that the group referred to here as "rural" in fact is contaminated by inclusion of some percentage of urban households, whose metropolitan status was altered by the Bureau of the Census to preserve confidentiality.

Exhibit 4.4

Availability of Basic Needs and Food Security, by Urban *versus.* Rural and Income

	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Geographic Location									
Urban [a]	8.4	0.4	14.7	2.2	6.4	7.1	9.9	12.1	4.6
Rural	7.7	0.3	13.3	2.1	5.6	8.2	11.7*	12.7	4.6
Under 100% FPL									
Urban [a]	19.7	1.2	30.6	6.3	15.8	14.9	16.5	32.8	13.4
Rural	12.3***	0.8	24.8*	4.9	12.3	15.0	18.0	29.2	9.5*
100-200% FPL									
Urban [a]	13.1	0.5	22.3	3.1	10.8	11.1	15.2	19.6	7.6
Rural	12.4	0.0***	19.2	3.6	9.2	11.3	18.8	19.2	7.7
Over 200% FPL									
Urban [a]	4.5	0.2	9.0	1.1	3.0	4.3	6.9	5.4	1.7
Rural	4.4	0.3	7.6*	0.6*	2.3	4.9	6.9	5.3	1.9
All households	8.3	0.4	14.4	2.2	6.2	7.3	10.2	12.2	4.6

Notes: [a] Reference category.

*** Statistically significantly different from reference category, $p < 0.01$.

** Statistically significantly different from reference category, $p < 0.05$.

* Statistically significantly different from reference category, $p < 0.10$.

Exhibit 4.5

Availability of Basic Needs and Food Security, by Household Composition and Income

	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Household Composition									
Single adult[a]	15.5	0.8	27.7	4.8	12.6	11.0	14.9	25.3	11.2
Married couple	5.7***	0.2***	10.0***	1.3***	3.9***	5.6***	8.0***	7.6***	2.5***
Other multiple adults	13.0*	0.9	22.0***	3.6*	10.7*	12.0	16.2	20.5***	7.3***
Under 100% FPL									
Single adult[a]	20.2	1.1	34.2	7.5	17.6	14.5	16.1	37.0	16.1
Married couple	15.1**	0.9	23.2***	4.3**	11.5***	14.3	17.3	24.2***	8.7***
Other multiple adults	20.4	1.7	32.3	6.4	17.2	16.9	17.3	37.8	13.5
100-200% FPL									
Single adult[a]	16.6	0.6	30.9	4.8	14.6	11.5	18.0	27.7	13.2
Married couple	11.4***	0.1	17.5***	2.4**	8.3***	9.9	14.0**	15.1***	5.0***
Other multiple adults	13.9	1.2	24.3**	4.0	13.0	15.2*	20.8	24.9	9.8
Over 200% FPL									
Single adult[a]	9.5	0.6	18.3	1.9	5.6	7.0	11.0	10.8	4.4
Married couple	3.2***	0.1	6.6***	0.7**	2.0***	3.5***	5.5***	3.9***	1.2***
Other multiple adults	9.7	0.5	16.9	2.2	7.1	8.5	13.7	11.7	3.8
All households	8.3	0.4	14.4	2.2	6.2	7.3	10.2	12.2	4.6

Notes: [a] Reference category.

*** Statistically significantly different from reference category, $p < 0.01$.

** Statistically significantly different from reference category, $p < 0.05$.

* Statistically significantly different from reference category, $p < 0.10$.

Other Hardships

Housing Safety and Overcrowding

An additional set of hardship measures pertain specifically to housing conditions. These comprise seven serious safety issues, counts of these issues, and overcrowding (more than 1.5 persons per room).

The most prevalent housing safety issue is problems with "pests such as rats, mice, roaches, or other insects." (Exhibit 4.6) Approximately 15% of families experience this condition. Next most common, in the 5 to 7% range, are leaking roofs or ceilings, broken windows, and holes in the wall or ceiling. Exposed wires, nonworking plumbing, holes in the floor, and overcrowding are experienced by 1 to 3% of families.

The relationship of each of these measures to income is marked. In all cases, households with incomes less than 100% of FPL experience housing safety issues at higher rates than higher income households. That said, for two of the measures there is either a non-statistically significant difference between those households with the lowest incomes and those in the middle income category (i.e., exposed wires and non-working plumbing), and a weaker statistical difference (p<0.10) for three other housing safety measures (i.e., broken windows, holes in the ceiling, and holes in the floor). This suggests that these measures may be less efficient indicators of housing safety hardships than other measures, where stronger differences between income groups exist.

Remarkably, while the lowest income group experiences each of the seven housing safety issues at rates of two-to-three times those of the highest income group, the 3- and 4-item combinations are experienced at rates four times as great. This suggests that these issues tend to be concentrated among certain low-income households. Overcrowding also is much more prevalent among the lowest *versus* the highest income group (4.9 *versus* 0.6%; $p < 0.01$).

Similar patterns are apparent when households with more and less liquid assets are compared. The better off group has prevalences of housing safety issues and overcrowding very similar to those of the highest income group, which comprises about two-thirds of the population.

Households in urban and rural areas: Housing safety problems are somewhat more common in rural than in urban areas. (Exhibit 4.7) Overall, families in rural areas are more likely to have broken windows, exposed wires, and holes in their walls or ceilings ($p < 0.05$, $p < 0.10$, $p < 0.05$ respectively), as well as combinations of three or more safety issues ($p < 0.05$).

Among the poorest households, overcrowding is slightly more common in urban settings ($p < 0.10$). In the middle income group, rural families are worse off than their urban counterparts with regard to leaking roofs or ceilings, holes in walls or ceilings, and holes in the floor ($p < 0.10$). They also are more likely to experience combinations of three or more safety issues ($p < 0.01$). In the highest income group, nonworking plumbing is more common among rural than urban households ($p < 0.05$).

Exhibit 4.6

Housing Safety and Overcrowding, by Income and Assets

	Problem with pests	Leaking roof or ceiling	Broken windows	Exposed wires	Nonworking plumbing	Holes in wall or ceiling	Holes in floor	3+ safety issues	4+ safety issues	Over-crowding
Household income relative to FPL										
Under 100% [a]	25.3	11.3	10.2	2.4	5.0	9.0	2.0	7.9	3.4	4.9
100-200%	19.5***	8.4***	8.1*	1.7	5.0	7.4*	1.4*	5.1***	2.3**	3.7**
Over 200%	11.7***	6.1***	3.7***	0.5***	2.2***	3.4***	0.7***	1.9***	0.8***	0.6***
Liquid assets										
< $100[a]	21.6	9.9	8.5	1.7	4.4	7.7	1.8	5.8	2.5	3.7
≥ $100	12.1***	6.1***	4.0***	0.7***	2.5***	3.8***	0.6***	2.2***	0.9***	0.8***
All households	15.3	7.4	5.6	1.0	3.2	5.1	1.0	3.4	1.5	1.9

Notes: [a] Reference category.
*** Statistically significantly different from reference category, $p < 0.01$.
** Statistically significantly different from reference category, $p < 0.05$.
* Statistically significantly different from reference category, $p < 0.10$.

Exhibit 4.7

Housing Safety and Overcrowding, by Urban *versus* Rural and Income

	Problem with pests	Leaking roof or ceiling	Broken windows	Exposed wires	Nonworking plumbing	Holes in wall or ceiling	Holes in floor	3+ safety issues	4+ safety issues	Over-crowding
Geographic Location										
Urban [a]	15.3	7.4	5.2	0.9	3.0	4.8	0.9	3.2	1.4	1.9
Rural	15.6	7.4	7.2**	1.4*	4.0	6.3**	1.6	4.6**	1.8	1.5
Under 100% FPL										
Urban [a]	26.1	11.7	9.7	2.3	5.1	9.2	2.0	8.0	3.3	5.3
Rural	22.3	9.9	11.9	2.4	4.5	8.3	2.1	7.4	3.8	3.1*
100-200% FPL										
Urban [a]	19.3	7.9	7.6	1.4	4.9	6.8	1.1	4.3	2.0	3.9
Rural	20.1	10.2*	10.0	2.7	5.1	9.9*	2.4*	8.0***	3.0	2.8
Over 200% FPL										
Urban [a]	11.7	6.3	3.5	0.5	2.0	3.3	0.6	1.8	0.8	0.6
Rural	11.8	5.5	4.6	0.6	3.4**	4.2	1.2	2.4	0.7	0.5
All households	15.3	7.4	5.6	1.0	3.2	5.1	1.0	3.4	1.5	1.9

Notes: [a] Reference category.

*** Statistically significantly different from reference category, $p < 0.01$.

** Statistically significantly different from reference category, $p < 0.05$.

* Statistically significantly different from reference category, $p < 0.10$.

Households headed by single adults, married couples, and other multiple-adult configurations: Overall, married couple households are less likely to experience housing safety hardships than single adult households and those with multiple adults. The only exception occurs in the case of the most infrequent housing safety issue, holes in the floor, where there was no difference in the likelihood of experiencing this hardship across different types of households. (Exhibit 4.8) Single adult and households with other multiple adult configurations experience housing safety hardships at higher rates and at relatively similar levels of prevalence.

It appears that the advantages *married couple households* have over single adult households are attributable to their income. Within the poorest group, married couple households are better off only with respect to pest problems ($p < 0.01$). The sole advantages of married couple households in the middle income group are with regard to broken windows and nonworking plumbing ($p < 0.05$). In the highest income group, however, married couple families are significantly better off with regard to four of the seven housing safety issues, as well as both safety issue combination measures. Households with *other multiple adult configurations* are significantly worse off than single-adult households in the poorest income group with regard to several housing safety hardships; they are more likely to have problems with pests, leaking roofs or ceilings, broken roofs, and four or more safety issues.

In contrast, a different pattern emerges in the domain of overcrowding. Single adult headed households are least likely to experience overcrowding. This finding is not surprising given that the presence of more persons (e.g., adults) in the household no doubt contributes to the significantly higher rate of overcrowding for multiple-adult and married couple families.

Overall, households with *other multiple adult configuration* are most likely to experience overcrowding ($p<0.01$). However, among the lowest two income groups, both *married couple* and *other multiple adult configurations* are significantly worse off than single adult households. Among the highest income group, only households with *other multiple adult configurations* are significantly more likely to experience overcrowding hardships ($p<0.01$).

The similarity in overcrowding patterns between married couple households and those with other multiple adult configurations, however, suggests that the SIPP's overcrowding measure may describe different circumstances, depending on the household's composition. In the case of married couple households, we would expect that these families would be sharing more common living space (e.g., bedrooms). As a result, for married couple households the measure may over-identify families that experience overcrowding hardships. However, households with other multiple adult configurations may not necessarily experience these efficiencies and the measure may in fact capture families that have "doubled up." These results seem to reflect some of the potential limitations of overcrowding measures that were discussed in Chapter 3.

Exhibit 4.8

Housing Safety and Overcrowding, by Household Composition and Income

	Problem with pests	Leaking roof or ceiling	Broken windows	Exposed wires	Nonworking plumbing	Holes in wall or ceiling	Holes in floor	3+ safety issues	4+ safety issues	Over-crowding
Household Composition										
Single adult[a]	20.7	9.2	8.0	1.7	5.2	7.8	1.2	5.7	2.7	1.3
Married couple	13.0***	6.6***	4.4***	0.7***	2.5***	3.9***	0.8	2.5***	0.9***	1.7
Other multiple adults	21.4	9.3	9.0	2.1	4.6	7.8	1.7	5.5	2.9	3.2***
Under 100% FPL										
Single adult[a]	25.9	10.8	8.4	2.3	4.9	9.5	1.9	7.6	3.0	2.9
Married couple	21.4*	10.3	10.1	1.7	4.6	7.4	2.0	6.7	2.9	6.2***
Other multiple adults	32.2*	14.5*	14.1**	3.9	6.1	11.4	2.3	10.8	5.4*	6.2**
100-200% FPL										
Single adult[a]	20.6	9.4	10.5	2.0	7.2	8.5	0.8	5.8	3.1	0.6
Married couple	17.5	8.2	6.5**	1.3	4.2**	6.5	1.4	4.5	1.8	4.8***
Other multiple adults	25.5*	8.0	11.2	2.7	4.8	9.5	2.1	6.5	2.8	3.4***
Over 200% FPL										
Single adult[a]	15.2	7.3	5.4	0.8	3.9	5.5	0.7	3.5	2.0	0.2
Married couple	10.9***	5.8	3.2**	0.4	1.8**	2.9**	0.6	1.5**	0.5**	0.4
Other multiple adults	15.4	8.0	6.0	1.1	3.9	5.6	1.3	3.0	2.0	2.0***
All households	15.3	7.4	5.6	1.0	3.2	5.1	1.0	3.4	1.5	1.9

Notes: [a] Reference category.
*** Statistically significantly different from reference category, $p < 0.01$.
** Statistically significantly different from reference category, $p < 0.05$.
* Statistically significantly different from reference category, $p < 0.10$.

Durable Goods

The analyses presented here focus on the two types of durable goods most frequently incorporated in researchers' material hardship indexes: whether a household has a refrigerator or stove in their home or building. Supplementary descriptive analyses for other types of durable goods measures that are included in the SIPP, but have not frequently been used in researchers' material hardship indexes, are presented in Appendix D.

Very high proportions of households have refrigerators and stoves (99.4 and 99.2%, respectively), with even households in the lowest income group likely to have these durable goods. (Exhibit 4.9) Households in the lowest two income groups were equally less likely to have a refrigerator, whereas households in the middle and upper income groups were more likely to have a stove. In both cases, households with fewer liquid assets were less likely to possess or have access to these durable goods. Furthermore, there were no significant differences among possession of or access to refrigerators or stoves among households that reside in rural *versus* urban areas (Exhibit 4.10) and while married couple households are less likely to not have a refrigerator or stove, this relationship disappears when controls for income are added to the analyses (Exhibit 4.11).

Overall, these findings suggest that these durable goods measures, individually or in combination, will only identify the most needy households. That is, lack of a refrigerator or stove is a rare event and only found in households with the fewest resources (i.e., income and assets). This is consistent with the findings reported by Federman et al. (1992) and Rector et al. (1999).

Exhibit 4.9

Availability of Durable Goods, by Income and Assets

	Refrigerator	Gas or electric stove
Household income relative to FPL		
Under 100% [a]	98.9	98.0
100-200%	99.0	98.9**
Over 200%	99.7***	99.6***
Liquid assets		
< $100 [a]	99.2	98.5
≥ $100	99.6***	99.5***
All households	99.4	99.2

Notes:
[a] Reference category.
*** Statistically significantly different from reference category, $p < 0.01$.
** Statistically significantly different from reference category, $p < 0.05$.
* Statistically significantly different from reference category, $p < 0.10$.

Exhibit 4.10

Availability of Durable Goods by Urban *versus* Rural and Income

	Refrigerator	Gas or electric stove
Geographic Location		
Urban [a]	99.4	99.2
Rural	99.4	99.2
Under 100% FPL		
Urban [a]	99.0	97.8
Rural	98.6	98.5
100-200% FPL		
Urban [a]	99.0	98.9
Rural	99.2	98.8
Over 200% FPL		
Urban [a]	99.7	99.6
Rural	99.8	99.6
All households	99.4	99.2

Notes: [a] Reference category.
*** Statistically significantly different from reference category, $p < 0.01$.
** Statistically significantly different from reference category, $p < 0.05$.
* Statistically significantly different from reference category, $p < 0.10$.

Exhibit 4.11

Availability of Durable Goods by Household Composition and Income

	Refrigerator	Gas or electric stove
Household Composition		
Single adult[a]	98.8	98.7
Married couple	99.6***	99.4***
Other multiple adults	99.4	98.6
Under 100% FPL		
Single adult[a]	99.0	98.3
Married couple	98.8	98.0
Other multiple adults	98.8	97.2
100-200% FPL		
Single adult[a]	98.2	98.3
Married couple	99.3	99.0
Other multiple adults	99.1	99.0
Over 200% FPL		
Single adult[a]	99.2	99.5
Married couple	99.8	99.7
Other multiple adults	99.7	99.0
All households	99.4	99.2

Notes: [a] Reference category.
*** Statistically significantly different from reference category, $p < 0.01$.
** Statistically significantly different from reference category, $p < 0.05$.
* Statistically significantly different from reference category, $p < 0.10$.

Joint Frequency: Measures of Material Hardship

The measures of hardship tabulated in the previous section tend to occur jointly. In this section we document the proportions of households experiencing particular hardships that are conditional on experiencing other types of hardship.

Joint Frequency of Basic Needs and Food Security

Each of the basic needs hardships is experienced by fewer than 15% of households and is a strong predictor of other types of hardship. Some of these relationships are definitional (i.e., all households that were food insecure with hunger were also food insecure). However, strong relationships also are seen across domains. For example, among the 8% of households with children that did not always pay their rent or mortgage, nearly two-thirds (64%) also did not always pay their utility bills, nearly a third (31%) had their telephone disconnected, and nearly half (46%) were food insecure (Exhibit 4.12,

second row[17]). Similarly, among the 12% of households that were food insecure, nearly a third (31%) did not always pay their rent or mortgage, nearly half (49%) did not always pay their utility bills, and nearly a quarter (24%) had their phone disconnected. These findings suggest that households that are in need tend to experience multiple hardships.

Similar qualitative patterns, at somewhat higher rates, are seen when the sample is restricted to households under 100% FPL. (Exhibit 4.13) That is, among households with less income, it is even more likely that those experiencing one hardship will also experience another. While "only" 46% of households with children that missed a rent or mortgage payment were also food insecure, among those under 100% FPL the corresponding proportion was 56%.

[17] Each cell in the exhibit after the first row shows the proportion of households experiencing the hardship corresponding to the column header, among those households that experienced the hardship indicated by the row description. Comparing these values to the marginal frequencies shown in the first row of the exhibit shows how much more prevalent each hardship is among households experiencing other hardships than among all households in general.

Exhibit 4.12

Joint Frequency of Basic Needs and Food Security Measures

	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Overall Frequency	**8.3**	**0.4**	**14.4**	**2.2**	**6.2**	**7.3**	**10.2**	**12.2**	**4.6**
Did not pay rent or mortgage	100.0	4.5	63.6	14.4	31.3	27.9	32.7	45.9	23.0
Evicted for failure to pay rent or mortgage	100.0	100.0	72.2	26.5	44.7	29.3	35.3	54.7	20.5
Did not pay gas, oil, or electricity bill	36.4	1.9	100.0	15.1	28.0	24.5	31.0	41.6	19.7
Lost gas, oil, or electricity for failure to pay	54.6	4.5	100.0	100.0	53.8	26.2	37.3	54.3	29.1
Telephone disconnected for failure to pay	41.5	2.7	64.9	18.8	100.0	27.4	32.3	47.1	21.3
Needed to see doctor or go to hospital but did not	31.5	1.5	48.2	7.8	23.4	100.0	64.2	47.3	23.7
Needed to see dentist but did not	26.4	1.3	43.7	7.9	19.7	46.0	100.0	39.2	19.7
Food insecure	31.1	1.7	49.2	9.7	24.0	28.4	32.9	100.0	37.3
Food insecure with hunger	41.8	1.7	62.4	13.9	29.1	38.1	44.2	100.0	100.0

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Exhibit 4.13

Joint Frequency of Basic Needs and Food Security Measures for Households Under 100% FPL

	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Overall Frequency	**18.2**	**1.1**	**29.4**	**6.0**	**15.1**	**14.9**	**16.8**	**32.0**	**12.6**
Did not pay rent or mortgage	100.0	6.1	68.2	19.0	34.6	31.9	34.0	55.9	29.1
Evicted for failure to pay rent or mortgage	100.0	100.0	93.0	45.7	47.0	42.6	44.7	64.8	42.9
Did not pay gas, oil, or electricity bill	42.1	3.5	100.0	20.5	32.4	27.7	31.5	54.3	25.9
Lost gas, oil, or electricity for failure to pay	57.2	8.4	100.0	100.0	45.8	28.9	34.2	58.3	32.9
Telephone disconnected for failure to pay	41.8	3.5	63.3	18.3	100.0	30.8	32.2	53.0	25.3
Needed to see doctor or go to hospital but did not	39.0	3.2	54.8	11.7	31.2	100.0	62.3	55.8	31.4
Needed to see dentist but did not	36.9	3.0	55.3	12.3	28.9	55.3	100.0	55.9	29.2
Food insecure	31.7	2.3	49.8	11.0	24.9	25.9	29.3	100.0	39.4
Food insecure with hunger	41.9	3.8	60.4	15.7	30.2	37.1	38.8	100.0	100.0

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Joint Frequency of Availability of Basic Needs, Availability of Selected Household Durables, and Housing Summary Measures

Lack of a refrigerator or stove is a mild predictor of basic need hardships (Exhibit 4.14, rows 2 and 3). The strongest relationships, not surprisingly, are between these household durables and the two food security measures (recall that less than 1% of households lack a refrigerator or stove).

Overcrowding is somewhat more strongly related to basic needs hardships. Compared with the general population, overcrowded households are three times as likely to be food insecure (37 *versus* 12%).

The presence of *housing safety issues* is very strongly related to all basic needs hardships. Households with four or more safety issues are nearly four times as likely as the general population to have missed a rent or mortgage payment, more than three times as likely to have missed a utility payment, four times as likely to be food insecure, and almost five times as likely to be food insecure with hunger. These households comprise 1.5% of the population.

Among households under 100% of poverty, lack of a refrigerator or stove is a strong predictor of experiencing food insecurity and hunger. (Exhibit 4.15) Food insecurity and hunger also are more prevalent among overcrowded households. Household safety issues are still a strong predictor and around two-thirds of households under 100% FPL with four or more safety issues missed a utility payment, and an equal proportion were food insecure.

Exhibit 4.14

Joint Frequency Selected Durable Goods and Housing Safety Measures, by Basic Needs and Food Security

	Basic Needs & Food Security								
	Did not pay rent or mortgage	**Evicted for failure to pay rent or mortgage**	**Did not pay gas, oil, or electricity bill**	**Lost gas, oil, or electricity for failure to pay**	**Telephone disconnected for failure to pay**	**Needed to see doctor or go to hospital but did not**	**Needed to see dentist but did not**	**Food insecure**	**Food insecure with hunger**
Overall Frequency	**8.3**	**0.4**	**14.4**	**2.2**	**6.2**	**7.3**	**10.2**	**12.2**	**4.6**
Selected Durable Goods									
Refrigerator	11.5	2.4	21.9	0.0	14.4	14.6	11.7	28.0	10.7
Stove	11.2	1.5	16.9	5.2	10.0	8.3	8.2	29.4	13.8
Housing Safety Measures									
3+ safety issues	27.6	1.9	42.3	11.0	18.2	22.8	29.3	46.1	21.6
4+ safety issues	30.2	3.3	46.4	13.2	19.8	22.4	33.6	48.8	22.1
Overcrowding	16.8	1.1	19.5	2.4	15.5	16.2	16.1	37.1	12.3

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Exhibit 4.15

Joint Frequency of Selected Durables and Housing Safety Measures, by Basic Needs and Food Security, Households Under 100% FPL

	Basic Needs & Food Security								
	Did not pay rent or mortgage	Evicted for failure to pay rent or mortgage	Did not pay gas, oil, or electricity bill	Lost gas, oil, or electricity for failure to pay	Telephone disconnected for failure to pay	Needed to see doctor or go to hospital but did not	Needed to see dentist but did not	Food insecure	Food insecure with hunger
Overall Frequency	**18.2**	**1.1**	**29.4**	**6.0**	**15.1**	**14.9**	**16.8**	**32.0**	**12.6**
Selected Durables									
No refrigerator	4.3	0.0	26.7	0.0	13.0	25.1	11.1	42.1	20.8
No stove	12.3	4.2	33.0	9.4	10.8	13.4	12.2	48.3	18.9
Housing Safety Measures									
3+ safety issues	37.3	4.3	56.9	15.8	25.1	26.1	29.3	59.4	28.7
4+ safety issues	38.1	6.8	65.0	17.2	21.5	24.1	34.5	68.3	32.4
Overcrowding	19.9	1.7	21.6	5.8	16.6	18.4	14.1	44.6	13.3

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Joint Frequency of Housing Safety Issues and Overcrowding

Individual housing safety issues and overcrowding are strong predictors of each other. (Exhibit 4.16) For example, households with pest problems (the most common safety issue, affecting 15% of the households with children) are two-to-four times as likely to experience each of the other six safety issues as the general population, and twice as likely to be overcrowded. Similarly, overcrowded households (2% of the population) are two-to-three times more likely to experience each of the safety issues, than households in the general population.

Similar qualitative relationships, at higher rates, are seen when the sample is restricted to households under 100% FPL. (Exhibit 4.17) About a quarter of those with pest problems also experience leaking roofs or ceilings, broken windows, and holes in the wall or ceiling. Those with the least common (and most serious) safety issues—exposed wires, nonworking plumbing, and holes in the floor—have very high prevalences of nearly all of the other safety issues. For example, among households under 100% FPL with exposed wires in their homes, 87% also have pest problems, 61% have leaking roofs or ceilings, and 65% have holds in their walls or ceilings.

Exhibit 4.16

Joint Frequency of Housing Safety Issues and Overcrowding

	Problem with pests	Leaking roof or ceiling	Broken windows	Exposed wires	Nonworking plumbing	Holes in wall or ceiling	Holes in floor	3+ safety issues	4+ safety issues	Over-crowding
Overall Frequency	**15.3**	**7.4**	**5.6**	**1.0**	**3.2**	**5.1**	**1.0**	**3.4**	**1.5**	**1.9**
Problem with pests	100.0	19.0	18.0	4.0	10.5	17.0	4.3	18.3	8.3	4.0
Leaking roof or ceiling	39.5	100.0	22.7	6.6	13.8	24.6	5.3	29.6	15.5	3.4
Broken windows	49.6	30.1	100.0	8.7	20.0	30.0	8.2	41.0	20.6	4.2
Exposed wires	60.3	47.8	48.0	100.0	31.7	61.2	16.1	73.3	50.9	6.1
Nonworking plumbing	50.1	31.7	34.7	10.0	100.0	33.4	10.8	47.7	25.6	4.8
Holes in wall or ceiling	51.3	35.7	32.8	12.2	21.1	100.0	11.8	46.9	25.4	4.7
Holes in floor	64.4	38.5	45.0	16.0	33.9	58.8	100.0	65.2	50.7	5.1
3+ safety issues	81.8	63.7	66.4	21.6	44.5	69.4	19.4	100.0	42.9	5.3
4+ safety issues	86.6	77.9	77.7	35.0	55.8	87.9	35.1	100.0	100.0	4.5
Overcrowding	33.0	13.6	12.6	3.3	8.3	12.8	2.8	9.9	3.6	100.0

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Exhibit 4.17

Joint Frequency of Housing Safety Issues and Overcrowding, Households Under 100% FPL

	Problem with pests	Leaking roof or ceiling	Broken windows	Exposed wires	Nonworking plumbing	Holes in wall or ceiling	Holes in floor	3+ safety issues	4+ safety issues	Over-crowding
Overall Frequency	**25.3**	**11.3**	**10.2**	**2.4**	**5.0**	**9.0**	**2.0**	**7.9**	**3.4**	**4.9**
Problem with pests	100.0	24.2	26.2	8.1	12.5	24.0	7.0	27.6	13.0	8.7
Leaking roof or ceiling	54.2	100.0	32.7	12.7	13.7	34.4	8.7	42.8	23.5	7.1
Broken windows	65.3	36.4	100.0	11.8	21.9	37.5	10.2	51.0	25.0	7.6
Exposed wires	86.9	60.9	50.5	100.0	35.4	64.6	21.5	84.7	64.2	5.8
Nonworking plumbing	63.1	30.8	44.5	16.7	100.0	42.6	14.5	60.2	29.4	6.2
Holes in wall or ceiling	67.5	43.1	42.3	17.0	23.7	100.0	17.5	63.5	34.2	7.7
Holes in floor	86.4	48.1	50.7	25.0	35.7	77.3	100.0	81.5	70.3	4.1
3+ safety issues	88.6	61.5	65.9	25.4	38.3	72.7	21.1	100.0	43.2	7.1
4+ safety issues	96.5	78.3	74.7	44.6	43.3	90.6	42.1	100.0	100.0	6.0
Overcrowding	45.4	16.6	15.8	2.8	6.4	14.3	1.7	11.4	4.2	100.0

Notes: Cell entries represent percent of households that have characteristic shown in column, among those that have characteristic shown in row.

Summary

The analyses presented in this chapter show the items included in the 1996 SIPP's Adult Well-Being Topical Module are potentially useful indicators of material hardship among families with children. Broadly speaking, the results indicate that these measures correspond to general notions about hardship. That is, the measures are related to unfavorable economic circumstances (e.g., low income and limited assets) and suggest that families oftentimes simultaneously experience multiple hardships. Moreover, the prevalence of certain hardships appears to meaningfully distinguish between groups of households that are economically better or worse off (e.g., single adult *versus* married couple households). The results presented in this chapter can be summarized in the context of the three dimensions of need: basic needs and food security; housing safety and overcrowding; and access to essential durable goods.

- **Basic needs and food security hardships.**
  Families with children who have low incomes (less than 100% of FPL) and limited assets (less than $100 in savings or checking accounts) experience basic needs and food security hardships more often than their counterparts with higher incomes and assets. However, not all of these negative outcomes are equally prevalent among low-income families. Evictions and utility shutoffs are far less frequent experiences, which suggests that these relatively "rare" events may describe only the most needy households.

  For the most part, basic needs and food security hardships are equally prevalent among rural and urban households; however, when controlling for income, rural households are slightly less likely to experience these types of hardships. Families that are headed by a single adult are more likely to experience basic needs or food security hardships than households with married adults or other multiple adult configurations.

  There is an anomaly in the results, however, in the case of unmet dental needs. Here, there is no clearly defined relationship between the study's economic, demographic, or household characteristic measures. Given that there may be many other reasons a person does not see a dentist that are unrelated to poverty or material hardship, these findings are not entirely surprising and reflect comments made by Roundtable Meeting participants (see Chapter 3) on this measure's potential usefulness in examining material hardship.

- **Housing safety and overcrowding hardships.**
  Generally speaking, families with low incomes and limited assets also are more likely to experience housing safety hardships than their higher income counterparts. Housing safety hardships are more prevalent among rural households and among households headed by a single adult.

  In the case of five of the seven measures, however, there either was no difference (i.e., exposed wires and non-working plumbing) or a weak statistical difference (i.e., broken windows, holes in the floor or ceiling) between households with incomes less than 100% FPL and those with incomes of 100-200% FPL. This finding suggests that these five measures may be less efficient indicators of economic-related hardships. It also is consistent with Roundtable Meeting participants' concerns that the housing safety measures included in the SIPP may both identify households that are well off and those that face economic challenges.

(See Chapter 3 for further discussion.) That said, low-income households are four times more likely to experience multiple housing safety issues (i.e., 3 or more or 4 or more). This finding implies that a combined measure of housing safety may be a better indicator of material hardship.

Families with the low incomes and limited assets are more likely to experience overcrowding. This is especially the case among those that live in urban areas. Single adult headed households are least likely to experience overcrowding; households with married adults and other multiple adult configurations are more likely to live in overcrowded households. This finding is not entirely surprising given that we might expect that households with fewer adults would be less crowded.

- **Access to essential durable goods hardships.**
  Very high proportions of households have refrigerators and stoves, with even households in the lowest income group likely to have these durable goods. These findings suggest that these durable goods measures, individually or in combination, will only identify the most needy households.

The findings also suggest that families with children who are in need generally experience multiple hardships. In the aggregate, each of the basic needs hardships is a strong predictor of other types of hardships, and even stronger patterns emerge among households with incomes under 100% FPL. Among low-income families the lack of a refrigerator or stove and housing overcrowding are strong predictors of whether a family experiences basic needs or food security hardships.

While the analyses presented in this chapter go a long way towards furthering our understanding material hardship measurement using the SIPP, more work is still needed to develop a consistent approach to measuring material hardship. In the following chapter, we present some of the unanswered questions and options for future research that may help us move towards establishing a common definition and approach to measuring material hardship.